

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NORTH CAROLINA  
SOUTHERN DIVISION  
Case No. 7:23-CV-897**

**IN RE:**  
**CAMP LEJEUNE WATER LITIGATION**  
  
**This Document Relates To:**  
**ALL CASES**

**REPLY IN SUPPORT OF UNITED STATES'  
MOTION TO EXCLUDE UNRELIABLE  
AND IRRELEVANT EXPERT TESTIMONY  
OF MUSTAFA ARAL**

**INTRODUCTION**

PLG fails to show that Dr. Aral's opinions are admissible under Fed. R. Evid. 702 and 703. Dr. Aral cannot offer his broad opinions on the reliability of the overall datasets, methods, and results of the ATSDR water models, as he expressly disclaimed knowledge of most of the ATSDR's water modeling work. In offering such opinions, Dr. Aral simply vouches for the work of other engineers, and PLG has failed to show that it is reasonable for engineers to vouch for the work of others without having a sufficient basis in facts and data to do so. Furthermore, by failing to respond to all but one of the United States' arguments about Dr. Aral's lack of sufficient knowledge of the water models, PLG concedes that Dr. Aral lacks a sufficient basis to offer opinions on the models. Finally, PLG fails to show that Dr. Aral's opinions regarding the contaminant concentrations simulated by the ATSDR's water models are helpful to the fact finder in determining individual exposures, so they should be excluded.

**ARGUMENT**

**I. PLG Has Failed to Show that It Is Reasonable for Environmental Engineers to Vouch for the Work of Other Engineers Without Having a Sufficient Basis in Facts and Data.**

PLG has failed to show that Dr. Aral's broad opinions on the ATSDR models are admissible by failing to produce any evidence that it is reasonable for engineers like Dr. Aral to vouch for the work of other engineers without sufficient knowledge of their work. Instead, they argue the United States has the burden to prove that environmental engineers "do *not* reasonably rely on [such limited]

data.” Pls.’ Opp’n, [D.E. 400](#), at 4 (emphasis added). In support of this argument, PLG asserts that Dr. Aral’s inability to testify about what PLG characterizes as a “historical factoid” has “no bearing on whether ATSDR’s reports or Dr. Aral’s testimony were reliable.” Pls.’ Opp’n, [D.E. 400](#), at 4. But this response only addresses one of Dr. Aral’s many areas of ignorance about the water models, which include most of the ATSDR’s methods for evaluating the reliability of its models, [D.E. 359](#) at 13, and nearly all the ATSDR’s data collections, *id.* at 12, including the underlying data used to determine a conceptual model framework and assess the models’ results, *id.* This response also misses the point on the only area of Dr. Aral’s ignorance that it addresses.

Contrary to PLG’s characterization, “why the ATSDR needed operational histories for the 96 supply wells in the Hadnot Point system, of which only a few were contaminated,” [D.E. 400](#) at 4, is not a mere “historical factoid.” Because “only a few [of the Hadnot Point system wells] were contaminated,” *id.*, the contamination in the Hadnot Point system was only present when those few contaminated wells were operating. Thus the contamination which the ATSDR modeled is completely dependent on the operational histories of the wells.

PLG’s response also contradicts Dr. Aral’s own statements in an ATSDR report chapter that he authored and his subsequent deposition testimony. In an ATSDR report chapter about the Tarawa Terrace system, Dr. Aral stated that “[u]ncertainties in the exposure outcome can have a significant effect on the epidemiological study. In particular, the uncertainty caused by the *groundwater pumping schedule* used in the simulations has been pointed out to be important.” ATSDR, TT Ch. H, [D.E. 372-8](#), at 16 (emphasis added). At his deposition, Dr. Aral confirmed the importance of well pumping schedules—*i.e.*, their operational histories—agreeing that for the Tarawa Terrace system, “[r]esults of [an optimized pumping schedules] study indicate that variation of pumping schedules may cause significant changes in the contaminant concentration levels and MCL arrival times at the water treatment plant.” Aral Dep. Tr., [D.E. 372-6](#), at 252:17–253:22. Thus, variation in well pumping as

reflected in well operational histories—especially at Hadnot Point, where only a few wells were contaminated—could cause significant changes in contaminant concentrations.

PLG fails to address how Dr. Aral had sufficient facts and data to opine on the models' overall reliability, considering he disclaimed knowledge of (1) the Hadnot Point water model's overall parameter sensitivity, uncertainty, and variability for TCE and its biodegradation products, (2) the ATSDR's conclusion that the Tarawa Terrace model was biased high, (3) the ATSDR's conclusion that the biodegradation rate of PCE selected for the Tarawa Terrace model could represent a minimum degradation rate (meaning it would model the slowest rate at which PCE could degrade), and (4) whether the ATSDR's chosen contaminant transport software modeled the processes by which contaminants bind to the soil as they travel through an aquifer. [D.E. 359](#) at 13 (citing Aral Dep. Tr., [D.E. 372-6](#)). Without disputing that Dr. Aral lacked this critical knowledge, PLG argues that Dr. Aral's opinions should not be excluded because the United States “fails to show that environmental engineers such as Dr. Aral do not regularly rely on data collected by other professionals when conducting their professional work.” [D.E. 400](#) at 5. This argument lacks any merit.

The issue is not whether environmental engineers rely on data “collected by other professionals.” *Id.* The issue is whether environmental engineers who disclaim knowledge of all but discrete and limited aspects of complex water modeling projects nonetheless have a sufficient basis in facts and data to broadly opine on the reliability of the results of those projects, the reporting of them, and their methods. *Id.* at 3. Moreover, as the proponent of Dr. Aral's testimony, PLG must show that an environmental engineer such as Dr. Aral can opine on the reliability of the work of other professionals without having the fundamental information necessary to assess that work. *See Md. Cas. Co. v. Therm-O-Disc, Inc.*, 137 F.3d 780, 783 (4th Cir. 1998) (the proponent of testimony “must come forward with evidence from which the court can determine that the proffered testimony is properly admissible”). Because PLG has failed to do so, the Court must exclude Dr. Aral's opinions.

The cases PLG cites do not support their argument. In some of those cases, the challenged experts were not vouching for the reliability of other experts' work without the information needed to do so, but instead were relying on other experts' work—work that experts in that field could reasonably rely upon—to form their own independent opinions. For example, in *United States v. Vandivere*, this Court found a psychologist could rely on a presentence report and another expert's report to reach an independent psychological opinion because these sources of information were “of the type a psychologist reasonably and routinely relies on in forming an opinion.” No. 5:15-HC-2017-D, 2015 WL 13689051, at \*1 (E.D.N.C. Dec. 14, 2015). Likewise, in *Collins v. Cottrell Contracting Corp.*, this Court found that a physician opining on a plaintiff's physical and mental impairments could rely on tests and reports of other medical professionals that were “exactly the type reasonably relied on by physicians such as [the challenged expert.]” 733 F. Supp. 2d 690, 701 (E.D.N.C. Aug. 5, 2010). Here, Dr. Aral is not reaching an independent opinion based on the modeling work of the ATSDR scientists. Instead, he is vouching for the reliability of that work without having an adequate factual basis to do so.

The other cases PLG cites also addressed issues distinct from whether an expert had enough information to reliably vouch for other experts' work. In *OmniSource Corp. v. Heat Wave Metal Processing, Inc.*, the issue was whether an expert could *ever* reliably criticize a fire investigation that he had not personally undertaken. No. 5:13-cv-772-D, 2015 WL 3452918, at \*6-8 (E.D.N.C. May 29, 2015). The court found the expert's testimony admissible because “experts are allowed to base their opinions on ‘factors or data in the case that the expert has been made aware of,’ if such information is a type reasonably relied upon by experts in the field.” *Id.* (internal citation omitted). And in *Verona v. U.S. Bancorp*, the issue was whether the expert had considered variables necessary to offer a reliable independent opinion on projected memberships in a business venture. No. 7:09-cv-057-BR, 2011 WL 1252935, at \*18–19 (E.D.N.C. Mar. 29, 2011). Here, by contrast, the issue is neither Dr. Aral's ability to vouch for other experts' work that he has actually reviewed, nor a failure to consider a particular

variable in an independent opinion. Instead, the issue is Dr. Aral’s lack of a sufficient factual basis to offer broad opinions on ATSDR’s models’ overall datasets, methods, and results when he repeatedly and emphatically disclaimed knowledge of critical aspects of the ATSDR water modeling projects. *See D.E. 359* at 7–9 (detailing Dr. Aral’s repeated disclaimers of knowledge of aspects of the water modeling that he did not personally undertake).

PLG also misses the point of *Funderburk v. S.C. Elec. & Gas Co.*, 395 F. Supp. 3d 695 (D.S.C. 2019). *D.E. 400* at 5. There, the Court excluded the expert’s opinion because the “only methodology and source for opining about the [disputed issue]” was a document prepared by the manufacturer that “d[id] not detail what methodology was employed to reach [the manufacturer’s] conclusion.” *Funderburk*, 395 F. Supp. 3d at 718–19. The Court concluded that such “unblinking reliance” on the findings of another expert resulted in “too great an analytical gap between the data and the opinion proffered.” *Id.* at 719. Here, Dr. Aral failed to sufficiently familiarize himself with the ATSDR work that he opines is reliable. It is therefore not simply an unblinking reliance on another expert’s work, but rather a blind vouching for the reliability of the work of other experts. The analytical gaps in Dr. Aral’s opinions are therefore greater than the one discussed in *Funderburk*. *See D.E. 400* at 8 (quoting Dr. Aral’s report’s description of the basis of his opinions, which does not include a review of the ATSDR’s water modeling projects).

PLG also claims that it is not using Dr. Aral as an improper screen against cross-examination because Dr. Aral “is not being used simply to introduce the data collected by the ATSDR, but rather to offer an expert opinion based on his review of that data.” *D.E. 400* at 7. This is inconsistent with the record. As detailed in the United States’ Memorandum, Dr. Aral testified that he *did not* review the ATSDR’s data or methodology for many of the key aspects of the ATSDR’s water modeling projects. *See D.E. 359* at 7–9 (detailing Dr. Aral’s disclaimers of knowledge about the ATSDR water modeling projects). Dr. Aral’s repeated refusal to answer questions by disclaiming knowledge of critical information confirms that PLG is attempting to use Dr. Aral to vouch for the reliability of the ATSDR’s

work while screening the details of that work from cross-examination. If the issue is the reliability of the ATSDR’s water models to produce contaminant concentrations for individual exposures, then those who know the details of the information on which the model is based should be the ones to testify, not Dr. Aral. *See In re James Wilson Assocs.*, 965 F.2d 160, 173 (7th Cir. 1992) (“The issue was the state of the building, and the expert who had evaluated that state—the consulting engineer—was the one who should have testified.”).

## **II. PLG Effectively Conceded That Dr. Aral Has No Reliable Basis for His Broad Opinions on the Overall Reliability of the ATSDR Models.**

By failing to respond to many of the United States’ arguments, PLG effectively concedes that Dr. Aral lacks a sufficient basis to opine on the ATSDR models’ overall reliability. Because proponents of expert testimony “must come forward with evidence from which the court can determine that the proffered testimony is properly admissible,” *Md. Cas. Co.*, 137 F.3d at 783, district courts may presume that a failure to respond to a *Daubert* argument is a concession that the challenged testimony is inadmissible, *Frankum v. Bos. Sci. Corp.*, No. 2:12-cv-00904, 2015 WL 1976952, at \*14 (S.D. W. Va. May 1, 2015) (“The plaintiff fails to respond to this argument, and I presume that the plaintiff concedes that [the expert] will not offer such an opinion at trial. I decline to raise counterarguments on their behalf.”).

PLG completely failed to respond to all but one argument that Dr. Aral’s disclaimer of knowledge should preclude him from offering opinions. As discussed above, PLG’s argument about information regarding well operations history is meritless because that information, as Dr. Aral’s pre-litigation statements confirm, is important to inform his opinion. For all other aspects of the ATSDR water modeling projects about which Dr. Aral disclaimed knowledge, PLG offers no response at all as to how Dr. Aral had a sufficient basis to reliably offer his challenged opinions without the disclaimed knowledge. For example, Dr. Aral opined that the “input parameters, parameter estimates, calibration, uncertainty and sensitivity analyses, were and remain reliable, scientifically valid and state of the art

procedures that are consistent with standard practices,” Aral Rep., [D.E. 359-2](#), at 12, but disclaimed knowledge of precisely those aspects of the models, Aral Dep. Tr., [D.E. 372-6](#), at 52:9-18, 55:6-57:9, 189:5-23, 231:23-232:10, 283:6-15, 288:4-11. PLG’s failure to respond to that argument is a concession that Dr. Aral lacks a sufficient basis for that opinion.

Similarly, Dr. Aral cannot reliably opine: (1) that the ATSDR’s “simulated monthly mean concentrations” are “reliable and represent, within a reasonable degree of scientific and engineering certainty, the contaminant levels in finished water at Camp Lejeune” or (2) that the ATSDR’s reports and conclusions “were all done applying proper scientific and engineering methodologies and remain to this day to be mathematically reliable, statistically accurate and correct,” Aral Rep., [D.E. 359-2](#) at 12–13, because he disclaimed knowledge of all but very limited aspects of the ATSDR’s methods for evaluating the models’ reliability, Aral Dep. Tr., [D.E. 372-6](#), at 189:5-23, 229:6-11, 231:24-232:10, 234:9-11, 325:22-327:10. PLG does not dispute—and therefore concedes—this. *See W. Va. Coal Workers’ Pneumoconiosis Fund v. Bell*, 781 F. App’x 214, 227 (4th Cir. 2019) (noting that a failure to respond should be taken as a concession because such a “failure to address an issue conspicuously presented in the appellant’s brief might well reflect a conscious choice”).

### **III. PLG Failed to Show That Dr. Aral’s Opinions About the Reliability of the Contaminant Concentrations Simulated by the ATSDR’s Water Modeling Are Helpful to the Finder of Fact.**

Dr. Aral’s broad opinions that the overall datasets, methods, and results of the ATSDR’s water modeling projects are reliable to a reasonable degree of scientific and engineering certainty, without any reference to the models’ fidelity to the historical contaminant concentrations they simulate, are irrelevant because they do not assist the “trier of fact to understand the evidence or to determine [the] fact in issue.” *United States v. Ancient Coin Collectors Guild*, 899 F.3d 295, 318 (4th Cir. 2018) (quoting *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 591 (1993)). An assessment of the accuracy, reliability, and correctness of water models for a particular purpose depends on that purpose,

not just “hydrogeological factors and principles[,]” as PLG alleges. [D.E. 400](#) at 12. As Dr. Aral explained in his textbook on health risk analysis in environmental modeling, among “three reservations one should always bear in mind while constructing and using a model” is “the use of the model outside the predictive range of the model developed.” Aral, Mustafa, *Environmental Modeling and Health Risk Analysis*, [D.E. 396-1](#), at 17. He further cautioned that “[w]hen working with a model, care must be given to ensure that the analysis remains within the valid representation range of the model,” *id.*, and that “[a]ll models are developed to answer a specific question about the system outcome. The use of models in a specific application cannot and should not go beyond the question posed during the model development stage,” *id.* at 40.

Now PLG wants Dr. Aral to opine in lawsuits about individual plaintiffs that the ATSDR’s model results are “reliable and represent, within a reasonable degree of scientific and engineering certainty, the contaminant levels in finished water at Camp Lejeune from 1953 to 1987.” Aral Rep., [D.E. 359-2](#), at 3. This is inconsistent with chapters detailing ATSDR’s modeling that Dr. Aral co-authored stating that the modeled contaminant concentrations cannot be used to determine whether individuals suffered health effects from exposure to contaminated water at Camp Lejeune. *See* [D.E. 359](#) at 17 (quoting ATSDR, TT Ch. A, [D.E. 357-2](#), at 113; ATSDR, HP-HB Ch. A, [D.E. 371-3](#), at 206).

PLG argues that Dr. Aral’s opinions are nevertheless relevant, citing cases observing that an expert’s testimony need not independently prove every element of a case. [D.E. 400](#) at 9–10 (collecting cases). But none of the cases on which PLG relies admitted expert testimony on general concepts that did not help prove *some* material fact in the case. For example, in *In re Toyota Motor Corp. Unintended Acceleration Mktg., Sales Practices & Prods. Liab. Litig.*, about vehicle collisions alleged to have been caused by a motor vehicle defect, the court *excluded* proffered expert testimony about vehicle safety regulations because the expert’s proffered “general testimony regarding the [vehicle safety regulations] does not sufficiently fit the facts of th[e] case. [The expert] offers no opinions that are specific to the

[vehicle] or the collision.” 978 F. Supp. 2d 1053, 1068 (C.D. Cal. 2013). The same is true of Dr. Aral’s proffered testimony: general testimony regarding the reliability of the ATSDR models with respect to “reasonable bounds of engineering ability,” without regard to the models’ intended purpose, limitations, and uncertainty, is not helpful to determine whether the results are reliable for determining individual exposure, the material fact at issue in this case.

PLG also asserts that the United States has argued a standard of relevance that its own experts cannot meet. [D.E. 400](#) at 9–11. This position is based on an argument the United States did not make—“that Dr. Aral must have experience in epidemiology to deliver a helpful opinion about water modeling.” *Id.* at 9. Instead, the United States argued that whether Dr. Aral’s opinions “fit” depends on their ability to inform on whether the ATSDR’s modeling methods and results are “sufficiently reliable, accurate, and correct for estimating individual exposure, as Plaintiffs seek to use them.”<sup>1</sup> [D.E. 359](#) at 16. Because PLG proposes using the ATSDR models for individual exposure determinations, rather than for their intended epidemiological purpose, their “valid representation range” must have the level of accuracy and precision needed to determine individual exposures in order to be reliable. *See Aral, Mustafa, Environmental Modeling and Health Risk Analysis, D.E. 396-1*, at 17 (“When working with a model, care must be given to ensure that the analysis remains within the valid representation range of the model.”). ATSDR itself has stated that this level of accuracy and precision was not necessary for an epidemiological study and that the models’ results were not intended to

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<sup>1</sup> This is precisely the sort of opinions that Dr. Spiliopoulos offered. For example, his opinion that “the results of these calculations are highly uncertain and cannot be used for determining dose reconstructions at the level of detail that ATSDR presented in their analyses” helps other experts determine whether ATSDR’s model results are reliable for use with individual plaintiffs. Spiliopoulos Rep., [D.E. 377-3](#), at 2.

determine individual health effects. *See, e.g.*, ATSDR, TT Ch. A, [D.E. 357-2](#), at 113; ATSDR, HP-HB Ch. A, [D.E. 371-3](#), at 206.

Because Dr. Aral's opinions about the reliability of the ATSDR's models' results do not help inform whether the models' results are reliable for individual exposure determinations, they do not "fit" this case, and the Court should exclude them. *See generally Daubert*, 509 U.S. at 591 ("'Fit' is not always obvious[. . .] scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.").

## CONCLUSION

For the foregoing reasons and those in the United States' Memorandum in Support of its Motion, the United States requests that the Court exclude Mustafa Aral's unreliable and irrelevant opinions on the overall datasets, methods, and results of the ATSDR's water modeling projects.

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**CERTIFICATE OF SERVICE**

I hereby certify that on July 3, 2025, I electronically filed the foregoing using the Court's Electronic Case Filing system, which will send notice to all counsel of record.

*/s/ Allison M. O'Leary*  
ALLISON M. O'LEARY